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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,313	03/14/2001	Paul R. Monday	10246US01	3080

7590 07/22/2004

Attention: Eric D. Levinson
Imation Corp.
Legal Affairs
P.O. Box 64898
St. Paul, MN 55164-0898

EXAMINER

SHINGLES, KRISTIE D

ART UNIT	PAPER NUMBER
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2141

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/808,313

Applicant(s)

MONDAY, PAUL R.

Examiner

Kristie Shingles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 05/03/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claims 1-41 are pending.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 05/03/01 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the Office. An initialed and dated copy of Applicant's IDS form 1449, is attached to the instant Office action.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 38, 6A-6N, and 8A-8N. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not

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accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 11 is objected to because of the following informalities: reference to claim 8 should be to claim 10. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-7, 9-18, 20-28, 32, 33, 39-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Nolan et al (USPN 6,640,278).

a. Per claims 1, 12, 23, 39, and 40 (differs only in statutory class), Nolan et al teaches a method comprising: detecting the attachment of a remote storage device to a network; and automatically incorporating storage capacity of the remote storage device into a logical

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storage volume (col.18 lines 5-22, col.2 lines 19-41, and col.34 lines 1-13; storage devices are detected by storage server and storage capacity is updated with the additional storage amount from the attached storage device).

b. Per claims 2, 13, 24, and 41, Nolan et al teaches the method of claim 1, wherein incorporating the storage capacity comprises incorporating the storage capacity into an existing logical volume (col.10 lines 36-50; incorporates the storage into an existing storage volume).

c. Per claims 3, 14, and 25, Nolan et al teaches the method of claim 1, wherein incorporating the storage capacity comprises incorporating the storage capacity into a new logical volume (col.10 lines 39-50; incorporates the storage into a new storage volume).

d. Per claims 4, 15, and 26, Nolan et al teaches the method of claim 1, further comprising automatically expanding a size of a storage space provided by a file system to include the storage capacity (col.25 lines 14-25, col.35 lines 3-25; storage space automatically grows in response to detected additional storage device).

e. Per claims 5, 16, and 27, Nolan et al teaches the method of claim 1, wherein incorporating the storage capacity comprises incorporating the storage capacity according to one or more pre-defined policies (col.8 lines 24-35; rule-based management is used for managing storage capacity incorporation).

f. Per claims 6, 17 and 28, Nolan et al teaches the method of claim 5, wherein incorporating the storage capacity comprises: forming a network-based connection with the remote storage device; creating a physical volume for the remote storage device; and adding the physical volume to a volume group (Applicant's Admitted Prior Art [AAPA] pg.1 lines 19-31 and col.2 lines 9-18, 42-67; storage devices are integrated into the network where the storage

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domain is configured and comprises the storage area of the storage devices, AAPA discloses assignment of physical volume to a volume group).

g. Per claims 7, 18, and 29, Nolan et al teaches the method of claim 5, further comprising selecting the volume group from a number of volume groups based on one of the pre-defined policies (Applicant's Admitted Prior Art [AAPA] pg.1 lines 19-31 and col.8 lines 24-35; rule-based management is used for managing storage capacity incorporation which could comprise selection of volume group, AAPA discloses assignment of physical volume to a volume group).

h. Per claims 9, 20, and 32, Nolan et al teaches the method of claim 1, wherein detecting the attachment of the remote storage device comprises receiving a multicast message from the remote storage device (col.29 line 61-col.30 line 64; detection can take the form of a multicast message or request).

i. Per claims 10 and 21, Nolan et al teaches the method of claim 1, wherein incorporating the storage capacity comprises automatically controlling a logical volume manager (LVM) in response to the detected remote storage device (col.2 lines 9-67 and col.4 line 63-col.5 line 6; storage domain manager acts as a logical volume manager that responds to the detection and management of remote storage devices).

j. Per claims 11, 22, and 33, Nolan et al teaches the method of claim 8 [10], wherein automatically controlling the LVM comprises: instantiating a network driver to form a network-based connection with the remote storage device; directing the LVM to create a physical volume for the remote storage device as if the remote storage device were local to the LVM; and directing the LVM to add the physical volume to a volume group (col.5 line 6-col.6 line 40, col.7

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line 41-61, col.8 lines 16-23, and col.9 line 57-col.10 line7; connection of the storage device is implemented via a network interface and the storage director manages the physical storage and adds to the physical resources of the storage domain).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8, 19, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nolan et al in view of Carter et al (USPN 5,987,506). Nolan et al teaches the method of claim 1 as recited above; however Nolan et al fails to teach method of claim 1, wherein detecting the attachment of the remote storage device comprises intercepting a request from the remote storage device for an Internet Protocol (IP) address. Nonetheless, Carter et al teaches the exchange of IP address information upon the connection detection of storage device (col.33 line 59-col.34 line 30).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to acquire an IP address for the remote device for the purpose of device identification. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

8. Claims 31-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nolan et al in view of Lee et al (USPN 6,601,101).

a. Per claims 31 and 38, Nolan et al teaches the system of claim 23 as recited above; however Nolan et al fails to teach the system of claim 23, wherein the computer is configured to maintain a pool of IP addresses and conform to the Dynamic Host Configuration Protocol (DHCP), and further wherein the NAS sensing module is configured to intercept a request from the remote storage device for an IP address. Nonetheless, Lee et al teaches utilizing DHCP and IP address transporting (col.14 lines 60-65 and col.20 lines 58-67).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use DHCP for the purpose of assigning and maintaining temporary host/device IP addresses. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

b. Per claims 34 and 35, Nolan et al teaches a NAS device, detection of a remote storage device and automatically incorporating storage capacity of the remote storage device into a logical storage volume; however Nolan et al fails to teach a NAS master remotely coupled to the NAS device via a first network and configured to automatically incorporate storage capacity of the storage device into a logical storage volume when the NAS storage device is attached to the first network and the system of claim 34 further comprising a client computer coupled to the NAS master via a second network and configured to access the logical storage volume. Nonetheless, Lee et al teaches a NAS master/slave architecture with a client coupled via a network (col.17 line 61-21 and col.20 lines 30-57).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use a NAS master for the purpose of implementing a serverless

network attached storage. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

c. Per claim 36, Nolan et al teaches an automatic expansion of storage capacity; however Nolan et al fails to teach the system of claim 34, wherein the NAS master is configured to automatically expand a size of a storage space mapped to the logical volume. Nonetheless, Lee et al teaches an inherent characteristic of using a NAS device, which is increasing storage space (col.2 lines 35-47 and col.23 line 54-col.24 line 2).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to configure a NAS master automatic expansion for the purpose of accommodating and allocating the additional storage capabilities and resources. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

d. Per claim 37, Nolan et al teaches incorporating the storage capacity according to one or more pre-defined policies; however Nolan et al fails to teach the system of claim 34, wherein the NAS master comprises a policy manager to define one or more policies for incorporating the storage capacity. Nonetheless, Lee et al teaches the use of policy servers for storage incorporation (col.16 line 55-col.17 line 22 and col.17 line 61-col.18 line 21).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to configure a NAS master to comprise a policy manager for the purpose of maintenance of a efficient uniform file system. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Padovano (USPN 6,606,690) discloses a system and method for accessing a storage area network as network attached storage.

b. Taylor et al (USPN 6,654,830) discloses a method and system for managing data migration for a storage system.

c. Paul (USPN 6,687,817) discloses a configuration of a network device via the network.

d. Soltis (USPN 6,697,846) discloses a shared file system.

e. Hu et al (USPN 6,535,518) discloses a system for bypassing a server to achieve higher throughput between data network and data storage system.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 703-605-4244. The examiner can normally be reached on Monday-Friday 8:30-6:00.

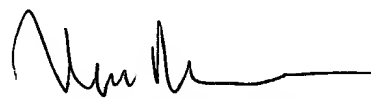
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 703-305-4003. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristie Shingles
Examiner
Art Unit 2141

kds



RUPAL DHARIA
SUPERVISORY PATENT EXAMINER